

**Module Description, available in: EN**

# Technology Management

**General Information**

**Number of ECTS Credits**

3

**Module code**

CM\_TechMgmt

**Valid for academic year**

2025-26

**Last modification**

2024-10-18

**Coordinator of the module**

Michele Kellerhals (HSLU, michele.kellerhals@hslu.ch )

**Explanations regarding the language definitions for each location:**

- Instruction is given in the language defined below for each location/each time the module is held.
- Documentation is available in the languages defined below. Where documents are in several languages, the percentage distribution is shown (100% = all the documentation).
- The examination is available 100% in the languages shown for each location/each time it is held.

	Lausanne			Lugano	Zurich		
<b>Instruction</b>					X E 100%		
<b>Documentation</b>					X E 100%		
<b>Examination</b>					X E 100%		

**Module Category**

CM Context module

**Lessons**

2 lecture periods and 1 tutorial period per week

**Entry level competences**

**Prerequisites, previous knowledge**

The module is particularly recommended to students subscribed to one of the following specialization areas:

- Business Engineering
- Energy & Environment
- Medical Engineering
- Mechanical Engineering
- Mechatronics & Automation
- Electrical Engineering
- Data Science
- Computer Science
- Phtotonics
- Aviation

## Brief course description of module objectives and content

The module describes the practical and theoretical framework of Technology Management, and explains the lifecycle and application of technologies and the related tools and activities used in Technology Management applied to practical case studies.

## Aims, content, methods

### Learning objectives and competencies to be acquired

1. Students understand the elements and the application areas of Technology Management.
2. Students are familiar with the practical and theoretical framework of Technology Management and understand its importance for innovative operating companies.
3. Students learn how companies select and work with technologies.
4. Students know how to manage technology throughout its lifecycle phases and understand the influence of technology on profitability and risk exposure for companies.
5. Students know how to deal with business stakeholders relevant for Technology Management
6. Students know how to develop a technology roadmap
7. Students are able to contribute to and organize a virtual cross-disciplinary technology management team and to jointly produce a project output

### Module content with weighting of different components

Technologies are among the most important strategic and operational assets of product and process driven companies. The module deals with managing technologies to enable companies to achieve competitive advantage and differentiation by sound technological innovation management. The focus of the module is on management of technology throughout its lifecycle, thus complementing topics such as Strategy, Innovation, Solutions, Product and Service Management, covering strategic and operational aspects including technology evaluation, selection, planning, development/provision, implementation, distribution, exploitation. Examples of new push technologies will be considered in the context of case studies of product/service innovations and discussed as group work. The module conveys comprehensive knowledge required for TM, e.g. technology trend analysis, technology scouting and recognition, technology roadmapping, lifecycle management, portfolio management, competitive strategies, protection, IPR- and knowledge management, corporate technology management and technology assessment. Each group will work on a case study of a real company and producing a technology roadmap as the main final semester project deliverable.

The Syllabus spread across the Semester is equally incorporated into the written exam.

Learning goal 7 "Collaboration" is spread across the semester week. Failure to equally collaborate with team members in the summative Team Project (as per MSE regulation), i.e. not reaching the corresponding learning goal 7 will lead automatically to a the entire Semestergrade Grade = 1.0 (33% of the module grade).

### Teaching and learning methods

The module is taught by theory inputs, illustrative examples, case studies, discussion of controversial questions and exercises. The concept of flipped classroom is applied where possible. Content is applied in the context of a case-study based project assignment to be developed in a crossdisciplinary virtual team setting. Teams will present content using role-based pitching techniques.

Students will self-select Technology fields from a list to work on and apply the technology fields to a company business, with the objective of producing a technology roadmap. This will be summarized in a report and documented on a weekly basis using a collaborative online Platform .

### Literature

[1] Technology Management; Dilek Cetindamar, Rob Phaal, David Probert; ISBN 9780230233348.

## Assessment

### Additional performance assessment during the semester

The module contains additional performance assessment(s) during the semester. The achieved mark of the additional performance assessment(s) applies to both the regular and the resit exam.

### Description of additional performance assessment during the semester

The module grade consists of 33% Semestergrade and 67% Module exam. The Semestergrade consists of:

- 50% individual written exam (15min) covering the student's semester case study (date will be communicated at start of the module)
- 50% grading consisting of a written group case study report (criteria and hand-in date will be communicated at start of the module)

### Basic principle for exams

**As a rule, all standard final exams are conducted in written form. For resit exams, lecturers will communicate the exam format (written/oral) together with the exam schedule.**

### Standard final exam for a module and written resit exam

Kind of exam

Written exam

Duration of exam

120 minutes

**Permissible aids**

*Aids permitted as specified below:*

**Permissible electronic aids**

Open Book

**Other permissible aids**

Use of GenAI is forbidden during electronic exam

**Exception: In case of an electronic Moodle exam, adjustments to the permissible aids may occur. Lecturers will announce the final permissible aids prior to the exam session.**

**Special case: Resit exam as oral exam**

**Kind of exam**

Oral exam

**Duration of exam**

30 minutes

**Permissible aids**

*Aids permitted as specified below:*

**Permissible electronic aids**

Open Book

GenAI is forbidden

**Other permissible aids**

No other aids permitted